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ABSTRACT

In a review of instruments measuring gender-related constructs, a number of shortcomings were found in existing scales. A new scale to measure sex-role attitudes was developed and tested by first proposing the construct of sex-role egalitarianism and then initiating the process of construct validation by developing a reliable measure of the construct. Sex-role egalitarianism was defined as an attitude which causes a person to respond to another individual independently of that other individual's sex. Five domains in which the attitude would manifest itself were specified: marital roles, parental roles, employment roles, social-interpersonal-heterosexual roles, and educational roles. College students' responses were used to reduce the initial 520 items to two 95-item parallel scales. Data obtained from the administration of the resulting Sex Role Egalitarianism Scale to other college students (N=252), senior citizens (N=59), and police officers (N=56) indicated acceptable coefficients of stability, equivalence, and internal consistency. The pattern of mean scores demonstrated support for the construct's validity. Findings suggest that the scale has potential research value as a paper-and-pencil measure of sex-role egalitarianism. (NRB)

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A New Measure of Sex-Role Attitudes

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A New Measure of Sex-Role Attitudes

In a comprehensive review of instruments measuring gender-related constructs, Beere (1979) found a number of shortcomings to existing scales and measures. According to Beere, test developers often fail to carefully define the domain(s) to be measured, to construct items that adequately sample the domain(s), and/or to demonstrate reliability and validity for instruments. The purpose of the present study was to develop a scale to measure sex-role attitudes with particular attention to avoiding these deficiencies. Specifically, the construct of sex-role egalitarianism was proposed and the process of construct validation was initiated by developing a reliable measure of the construct.

Definition of the Construct and Identification of Relevant Domains

Sex-role egalitarianism was defined as an attitude which causes one to respond to another individual independently of that other individual's sex. One who possesses this attitude believes that the sex of an individual should not influence the perception of that individual's abilities or the determination of that individual's rights, obligations, and opportunities. Consequently, an egalitarian does not discriminate against or relate differentially to another on the basis of the other's sex.

An essential feature of the construct is its purposeful disregard of the sex of the individual who is the attitude object. In other words, the construct takes into consideration not only judgments of women in their role behaviors but also includes judgments of men in their role behaviors. In this way, it is different from previous paper-and-pencil measures of sex-role attitudes which primarily emphasize the roles of women (e.g., the extensively used Attitudes Toward Women Scale (Spence & Helmreich,

1972)). The true egalitarian as defined here is one who responds nondiscriminately not only to women in nontraditional roles but also to men in nontraditional roles. As will be described below, great care was taken to insure that item construction adequately reflected this aspect of the construct.

After defining sex-role egalitarianism, the next task was to specify domains in which the attitude manifests itself. It was established a priori that the scale would sample "relevant aspects of an adult's life" and the specification of domains was based on a rational judgment of the major roles assumed by adults in this society. Five domains or role categories were defined as follows: (a) Marital Roles pertains to beliefs about the equality or inequality of husbands and wives regarding various aspects of their relationships to each other and the maintenance of their home life; it does NOT include statements pertaining to their roles as parents; (b) Parental Roles pertain to beliefs about the equality or inequality of fathers and mothers regarding various aspects of their roles as parents; (c) Employment Roles pertains to beliefs about the equality or inequality of males and females in regards to issues relating to paid employment; (d) Social-Interpersonal-Heterosexual Roles pertains to beliefs about the equality or inequality of males and females in their relationships to social groups and individuals, and to one another on an interpersonal or sexual basis; and (3) Educational Roles pertains to beliefs about the equality or inequality of males and females in school, university, or training facility settings, including roles as students or providers of education and training.

It is important to note that these role categories were not intended to represent independent aspects of an adult's life. Or, in the psychometric sense, they were not intended to produce orthogonal subscales. Rather, they were defined for the purpose of enhancing the content validity of the measure.

Scale Development

Item Construction

According to the definition of sex-role egalitarianism, every item included in the scale had to compare one sex with the other in some fashion. Most items in the initial item pool made direct reference to both sexes and included verbs or phrases making a comparison between them (e.g., "equally acceptable," "as qualified as," "better than," and so on). Some items made comparisons by implication; for example, one stated: "A wife should be the one to decide on a couple's social activities." The item implicitly compares or relates men and women. That is, the item could have been phrased: "The wife rather than the husband should be the one to decide on the couple's social activities."

Perhaps the most significant consideration in item construction was what came to be called a radical sexual bias. The simple task of determining the keyed response for each item led to the conclusion that in many cases what seemed to be an egalitarian response could be interpreted, at least on a hypothetical level, as the response of a nonegalitarian, either pro-masculine or pro-feminine. It was initially assumed that the nonegalitarian responses were simply the reversals of the egalitarian responses; and this is true to the extent that the nonegalitarian is traditional in believing that men are "better" at certain things (e.g., a business career) and women are "better" at other things (e.g., a nursing career). However, it seemed necessary to posit hypothetical individuals with biases related to the superiority of one sex over the other across all role behaviors. Thus, a radical feminine bias (RFB) would lead a respondent to indiscriminately assert that women can do everything in every way "better" than men. Likewise, a radical masculine bias (RMB) would

lead a respondent to indiscriminately assert that men can do everything in every way "better" than women. To clarify the issue of radical sexual bias, the reader is referred to Table 1, which contains three items included in the final instrument. As the table indicates, the sex-role egalitarian and the person with a RFB would both disagree with item 1, and the sex-role egalitarian and the person with a RMB would both disagree with item 2. The question of whether or not persons with a RFB or RMB do, in fact, exist is an empirical one, yet given the definition of the construct the item construction process could not afford to overlook their potential existence.

Insert Table 1 about here

For each domain, then, there were three types of items: (a) egalitarian items with no confounding of responses with radical sexual bias, (b) items with confounding of responses with RFB, and (c) items with confounding of responses with RMB. Items confounded with RFB and RMB were always keyed "disagree," and some means had to be taken to differentiate between individuals holding a radical sexual bias and those with an egalitarian attitude. It was decided to assign an equal number of RFB and RMB items to each domain. While not eliminating the biases, this procedure did insure that a sexual egalitarian's total score would always be higher than that of a RFB or RMB respondent; the nonegalitarian having traditional attitudes about sex roles would receive the lowest score. Moreover, a benefit in identifying the RFB and RMB was that it forced the process of scale development to include an equal number of items expressing male superiority over females and female superiority over males.

The initial pool of 524 items from which the instrument was constructed included mostly items written specifically for this scale with some items modified from previously used scales.

Preliminary Instrument

Following item construction, three male and two female psychology graduate students served as judges to independently sort the items into the defined domains. Only those items for which there was complete agreement among the five judges on domain classification were retained. Of these, 40 to 42 items were selected from each domain and placed in random order to create the preliminary instrument. Care was taken to include an equal number of RFB and RMB items for each domain.

The 204-item instrument was then administered to 530 individuals residing in the central Michigan area. The majority of respondents were graduate and undergraduate students at Central Michigan University. The remainder were solicited from local community organizations. Of the total sample, 26% were male and 74% were female. Though the range of ages was 18 to 72, the distribution was positively skewed with most respondents at the lower end. The mean age was 23.24 years with a standard deviation of 6.79. Data obtained on marital status indicated that 78% of the respondents were single and never married, 18% were presently married, and 4% were previously married.

The instructions for the instrument stated that participation in the study was voluntary and anonymous. For each item, the respondent was asked to indicate how he or she "feels about men and women" by circling one of five response alternatives ranging from "strongly agree" to "strongly disagree".

Table 2 provides a summary of the data obtained from the administration of the preliminary instrument. A major focus in the analysis of the data was an examination of the internal consistency of the five domain subscales. As Table 2 indicates, the mean item-total correlations for the five subscales ranged from .467 to .551, and the values for coefficient alpha ranged from .921 to .949.

Insert Table 2 about here

Construction of Alternate Forms

It was originally intended that the final scale would be constructed by using item-total correlations and judgments of item content to select 15 to 20 items from each set of 40 or 42 items. Those items with low item-total correlations were to be eliminated, as was any item with content very similar to the content of another item that contributed more to the internal consistency of the subscale. However, the strength of the item-total correlations and the high estimates of internal consistency reliability suggested the possibility of constructing alternate forms. Application of the Spearman-Brown formula revealed that if the number of items on the subscale with the lowest internal consistency reliability estimate (Social-Interpersonal-Heterosexual Roles) was halved, the reliability of the resulting 20-item scale would be approximately .86, still a respectable value. Therefore, it was decided to develop two versions for each of the five subscales.

For each subscale the total set of items was separated into the three groups of item types: (a) unambiguous egalitarian items, (b) RFB items, and (c) RMB items. Within each group, the items were ordered according to the values of item-total correlations. First, it was

decided to eliminate any item which reduced the internal consistency of the 40- or 42-item subscales. Then, to maintain the same number of items per subscale, other items with low item-total correlations were eliminated, always with the constraint that the number of RFB items and RMB items be equal to one another. At the end of this process, each subscale contained 38 items.

By subscale and by group within subscale (egalitarian, RFB, and RMB), the items were alternately assigned to Forms B and K. Table 3 contains a breakdown of the numbers of egalitarian, RFB, and RMB items in each subscale as well as the item keying for subscales in each of the final 95-item alternate forms.[1]

Insert Table 3 about here

Psychometric Characteristics of the Scale

Method

To investigate the psychometric characteristics of the resulting Sex-Role Egalitarianism (SRE) Scale, four new samples of respondents were selected: 56 police officers, 59 senior citizens, 141 undergraduate students at a private business college, and 111 undergraduate students enrolled in psychology classes at Central Michigan University. Of the total group, 56% were males and 44% were females. Approximately 69% had never been married, 17% reported that they were presently married, and 14% were widowed or divorced. The four samples were chosen for the purpose of achieving at least some degree of representativeness of the general population and to provide variability in age.

The SRE Scale was administered both in group settings and on an individual basis. The instructions remained the same as those for the

preliminary instrument. In order to obtain estimates of the various types of reliability (stability, equivalence, and internal consistency), some respondents in the sample groups completed both Forms B and K on a single occasion, others completed both alternate forms but on separate occasions, others completed the same form on two occasions, and still others completed both forms on one occasion and both forms again on a separate occasion. For those completing scales on two separate occasions, the interval between test administrations was 3 to 4 weeks. Where different forms were presented, the order was counterbalanced. In addition, a subset of 160 respondents completed the Edwards Social Desirability Scale (Edwards, 1957).

Reliability

Table 4 provides reliability data as well as the means and standard deviations of the subscales across all sample groups. It is important to remember in the case of internal consistency that the estimated reliabilities are for 19-time subscales. Given the ratio of items to subjects in each analysis, it is reasonable to conclude that these values are relatively stable estimates of the parameters. As expected from the Spearman-Brown prophecy formula, internal consistency reliability for these 19-item subscales remained adequately high, with a mean of .873 over all 10 subscales. Considering the 3 to 4 week interval between testing occasions, the coefficients of stability are likewise acceptable, averaging .847 over the subscales. Finally, the correlations between Forms B and K administered on the same occasion (averaging .860) provide support for the contention that they are parallel measures of the same content dimensions. A comparison of the means and standard deviations of Forms B and K for each subscale indicates that the average difference between means was 1.38 and the average difference between standard deviations was .58.

Insert Table 4 about here

Preliminary Validity Data

A priori, it was hypothesized that the psychology student respondents would score higher (more egalitarian) than business students and that both student groups would score higher than police officers and senior citizens. An overall F test followed by an orthogonal partitioning of the treatment sum of squares revealed that these hypotheses were consistently supported across all 10 subscales. On the average, the mean raw score difference between psychology students and business students was 7.0, while the mean raw score difference between students and nonstudents was 6.2. While mean differences between samples from different population subgroups are not strong evidence of the validity of the egalitarianism construct, the findings of such differences, when hypothesized a priori, are at least tentatively supportive and suggest the potential for future validity studies.

Evidence for discriminant validity may be found in the correlations between the subscale scores and scores on the Edward's (1957) measure of social desirability (presented in the last column of Table 4). The relatively low values for these correlation coefficients suggest that the SRE Scale is not measuring a general tendency to respond in a socially desirable manner and that the high reliability coefficients do not reflect variance attributable to this tendency.

Conclusions

The first goal of construct validation was achieved in that quite acceptable coefficients of stability, equivalence, and internal consistency resulted. The pattern of mean scores across the several samples

and the correlations with the social desirability measure demonstrate initial support for the validity of the construct. Moreover, each of the five subscales has face validity in that for a particular situation either alternate form for a subscale can stand alone as a reliable measure of egalitarianism. For example, a researcher interested in measuring egalitarianism as it relates to job opportunities may administer either Form B or K of the Employment subscale and expect a reasonably accurate or precise assessment of individual differences in sex-role egalitarianism as it relates to the employment domain. In addition, the researcher has an equivalent form available for studies requiring repeated measurement. Of course, the administration of all five subscales would sample a wider range of egalitarian-related attitudes.

From a generalizability theory perspective (Cronbach, Gleser, Nanda, & Rajaratnam, 1972), one can use the entire set of items from both alternate forms of a subscale to manipulate the reliability required for a specific kind of research. That is, if internal consistency estimates in the mid-.80's for an alternate form are not sufficiently precise for a particular problem, the researcher might consider adding items from the equivalent form to achieve the desired level of precision. Using the Spearman-Brown formula, the total number of items to achieve acceptable reliability levels can be determined. (Likewise, if the researcher desires a less obtrusive measure or feels less time must be devoted to instrument administration, then the possibility of reducing the number of items exists.) The two forms can conceivably be recombined in total to provide 38-item subscales with higher reliability.

At present, additional work in establishing the validity of the sex-role egalitarianism construct is underway. One effort involves the

administration of the instrument in combination with other measures of sex-role attitudes in order to generate information from a multitrait multimethod perspective (Campbell & Fiske, 1959). Another series of studies relates scores on the SRE Scale to various situational variables. The data presented in this paper definitely suggest that the scale has potential in research requiring a paper-and-pencil measure of sex-role egalitarianism.

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Table 1

Confounding of Egalitarianism with Hypothetical

Radical Sexual Biases

	Keying			
	Egal.	Nonegal.	RFB	RMB
1. Male managers are more valuable to an organization than female managers.	D	A	D	A
2. A male nurse cannot be as effective as a female nurse.	D	A	A	D
3. Men and women are equally qualified for law enforcement jobs.	A	D	D	D

Note: D = keyed disagree; A = keyed agree; RFB = radical feminine bias; RMB = radical masculine bias.

Table 2

Data from Preliminary Instrument Administration

Subscale	Number of Items	Mean	Standard Deviation	Mean Item-Total Correlation	Coefficient Alpha	Number of Respondents[a]
Marital Roles	42	174.03	17.60	.496	.932	512
Parental Roles	42	178.41	17.60	.551	.949	509
Employment Roles	40	162.88	18.46	.521	.938	510
Soc-Int-Het Roles	40	159.70	17.54	.467	.921	507
Educational Roles	40	165.02	15.80	.493	.927	506

[a]Number of respondents varies due to missing data.

Table 3

Number of Each Item Type and Keying for Alternate Forms

Subscale	Form	Unambiguous Egalitarian	RFB Items	RMB Items	Keyed "agree"	Keyed "disagree"
Marital Roles	B	7	6	6	7	12
	K	7	6	6	7	12
Parental Roles	B	7	6	6	7	12
	K	7	6	6	7	12
Employment Roles	B	9	5	5	7	12
	K	9	5	5	8	11
Soc-Int-Het Roles	B	9	5	5	9	10
	K	9	5	5	9	10
Educational Roles	B	9	5	5	9	10
	K	9	5	5	9	10

Table 4

Psychometric Data on the SRE Subscales[a]

Subscale[b]	Form	Mean	Standard Deviation	Internal Consistency	Stability	Equivalence[c]	Correlation With SD
Marital Roles	B	72.8	9.6	.88 (337)	.85 (140)	.88 (239)	.16 (79)
	K	71.9	9.2	.88 (346)	.85 (141)		.15 (80)
Parental Roles	B	72.5	10.0	.89 (337)	.85 (137)	.86 (239)	.15 (79)
	K	73.1	9.5	.89 (346)	.83 (144)		.11 (81)
Employment Roles	B	70.4	10.3	.89 (337)	.88 (137)	.87 (240)	.19 (79)
	K	69.1	10.6	.89 (346)	.88 (141)		-.03 (81)
Soc-Int-Het Roles	B	71.0	8.9	.84 (337)	.84 (137)	.84 (235)	.14 (79)
	K	69.1	9.5	.84 (346)	.86 (143)		.18 (81)
Educational Roles	B	74.0	9.3	.89 (337)	.81 (136)	.85 (239)	.14 (79)
	K	71.8	8.2	.84 (346)	.82 (145)		-.02 (81)

[a]Calculated on data aggregated across all sample groups. Numbers in parentheses are Ns for each analysis.

[b]Each subscale contains 19 items.

[c]For those subjects who received both alternate forms on two occasions, the first administration was used in calculating equivalence coefficients.

Footnotes

[1]Copies of the instrument may be obtained by writing: Lynda A. King, Psychology Department, Sloan Hall, Central Michigan University, Mt. Pleasant, MI 48859.